

PAT-NO: JP401205907A

DOCUMENT-IDENTIFIER: JP 01205907 A

**TITLE: NC CONTROL IN TWIST DRILL FEED/RETURN ON
DRILLING
MACHINE**

PUBN-DATE: August 18, 1989

**INVENTOR-INFORMATION:
NAME
NAGASEKO, MICHIO**

ASSIGNEE-INFORMATION:	
NAME	COUNTRY
NAGASEKO MICHIO	N/A

APPL-NO: JP63028348

APPL-DATE: February 8, 1988

INT-CL (IPC): B23B047/18

US-CL-CURRENT: 408/14, 408/140

ABSTRACT:

PURPOSE: To shorten the drilling work time by successively carrying out a rapid traverse process up to the time when the top edge of a twist drill reaches the surface of a workpiece, crawling feeding process for centering, low speed feed process for boring, and a rapid return process after the completion of working.

CONSTITUTION: When drilling work is carried out by using a twist drill, rapid traverse is carried out in a rapid traverse process FF at a speed of e.g. 3m/min until the top edge of the twist drill reaches the surface of a work from an original point A, and centering is carried out in a process $Q<SB>1</SB>$ for feeding the twist drill at a speed of 0.5m/min. After centering, the twist drill is fed in a low speed process $Q<SB>2</SB>$ at a speed of 1m/min, until the drill reaches the depth Z of the hole, and after the boring work is completed, the drill is returned to the original point A in a rapid return process FB at a speed of e.g. 3m/min. Thus, the boring work time can be shortened, and the working efficiency can be improved.

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PAT-NO: JP403111116A

DOCUMENT-IDENTIFIER: JP 03111116 A

**TITLE: AMOUNT-OF-STEP VARIABLE TYPE DEEP HOLE
DRILLING METHOD**

PUBN-DATE: May 10, 1991

INVENTOR-INFORMATION:

NAME

YAMAGUCHI, KATSUNORI

ASSIGNEE-INFORMATION:

NAME

OKUMA MACH WORKS LTD

COUNTRY

N/A

APPL-NO: JP01251059

APPL-DATE: September 27, 1989

INT-CL (IPC): B23B047/18

US-CL-CURRENT: 408/3

ABSTRACT:

PURPOSE: To significantly reduce working hours, and to

facilitate the preparation of a working program by adopting a step cycle in which the depth of cut is gradually decreased each time the depth of cut or the sum of the depth of cut reaches a reference amount.

CONSTITUTION: The reference amount (one block) of the depth of cut is determined by multiplying the diameter of a drill by a constant, for instance, let the constant is 2, twice the drill diameter is determined to be the reference amount; and variable step factors are set, for example, to 1 for a first block, to 2 for a second block, and to the values added 2 to the preceding value for a third block and later; and the depth of cut for each time is made to be the value obtained by dividing the reference amount by the variable step factor. To be concrete, for the first block one time of the step cycle of the depth of cut of twice the drill diameter is executed, for the second block two times of the step cycle of the depth of cut equal to the drill diameter, for the third block four times of the step cycle of the depth of cut of 1/2 of the drill diameter, and for the succeeding blocks the step cycles reduced in the depth of cut are repeatedly executed.

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PUB-NO: DE019904117A1

DOCUMENT-IDENTIFIER: DE 19904117 A1

TITLE: Process for boring holes in workpiece

PUBN-DATE: August 5, 1999

INVENTOR-INFORMATION:

NAME	COUNTRY
MOMOCHI, TAKESHI	JP
SUGIYAMA, HARUHITO	JP
SHIOZAKI, MASAHIRO	JP
MATUMOTO, MICHIO	JP
SAGARA, MAKOTO	JP

ASSIGNEE-INFORMATION:

NAME	COUNTRY
TOSHIBA MACHINE CO LTD	JP

APPL-NO: DE19904117

APPL-DATE: February 2, 1999

PRIORITY-DATA: JP02129598A (February 2, 1998)

INT-CL (IPC): B23B039/00, B23B035/00 , B23Q015/007

ABSTRACT:

CHG DATE=19991202 STATUS=N>A process for boring holes in workpieces using an

NC program has separate programs for the start, intermediate and final phases.

The drill is set to cut preset depths for each phase and between each cut it is

retracted to clear swarf and to cool the drill bit. The program controls the

positioning of the drill bit taking into account the new depth, and the speed

and pressure of the next drilling stage. The length of cooling time between

cuts is adjusted as the bore deepens.